THE VETERINARY RECORD

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QUEEN VICTORIA.

The death of the Queen has closed the longest and most glorious of all the reigns of British Sovereigns. Never before can it be truly said that the passing of one soul has caused the whole world grief. Not only in British Colonies and in Europe but from every distant country of the earth comes the same report—sincere and respectful mourning for one who was loved and admired with a deep personal feeling. Other sovereigns have inspired veneration and respect but none has drawn out that personal love, as though of a familiar friend, which has been displayed by millions who had never seen Queen Victoria. "One touch of nature makes the whole world kin." Our late Sovereign always showed such ready sympathy with the joys and griefs of her subjects that recognition of her greatness and dignity was tempered by a feeling of admiration for the more human and personal attributes which were constantly made evident. It is doubtful whether any King, be he ever so good, could have inspired these sentiments in a nation. If the Victorian age ceases with the life of the illustrious lady who gave it its name, the spirit of the age will not be lost. The example of truth and uprightness, of impartiality and moderation, of prudence and humanity will endure for ever.

EDWARD VII.

"The Queen is dead, long live the King." Without a trace of inconsistency we may all re-echo the historic phrase. Our regrets for the Queen are as honest as our hopes for the King. Loyalty to the mother alone would make us all loyal to the son, even had we not facts and experience to guide us in pleasant anticipations. These are so well expressed by *The Times* that we cannot do better than quote:—

"The Prince of Wales in all his public relations has been as unique among those who have occupied the same position as was his mother among Sovereigns. He has never failed in his duty to the Throne and the nation. He has never followed the example of his predecessors by encouraging intrigues, or placing himself at the head of a faction. What is much more, he has shown a scrupulous care, worthy of his mother herself, never to overstep by a hair's-breadth the lines marked out for him by the Constitution, and never to compromise by any leaning to this party or the other the position which he expected one day to fill. To all the servants of the Crown he has invariably shown equal and impartial courtesy and amiability. He has had and has used opportunities to serve the public in ways open only to one in his detached position, but with admirable discretion and perfect tact he has avoided the smallest appearance of service to a party."

PLEURITIS IN THE HORSE.

Subject.—Bay five-year-old shire mare. Was seized 13th November last after ordinary day's work, with severe rigors: diffusable stimulants were freely administered and my patient made otherwise comfortable

Next morning the rigors had ceased, mare was feeding fairly well, to a casual look seemed comfortable; pulse full and soft, temperature 105 F., respirations little deep, no cough, extremities cold. I again prescribed stimulants, and continued to use applications to the chest in the way of mustard and turpentine, and intimated to owner that the severe rigors of the previous night, and the listless condition of the mare on this visit probably meant the ushering in of some lung trouble. I watched the case closely every day, prescribing stimulants and tonics, but the mare remained in an unsatisfactory condition, viz., with occasional rigors, deep breathing, light temperature, spare appetite, cold extremities, which had to be kept warm by artificial means, until November 30th, when seeing, after all that had been done, the gradually decreasing appetite, odour of breath, and slight dropsy of inferior part of the thorax. there was no improvement, I carefully auscultated the chest walls and concluded there was considerable effusion of fluid on the right side. I accordingly tapped this side and removed full two ordinary stable pailfuls of turbid fluid.

After this operation the mare considerably improved, laid down for about one hour first time, as far as I could learn, since onset of attack. Temperature declined at intervals to 102 F. and 103 F., and remained so for a couple of days. I again performed paracentesis thoracis on the right side but could get very little fluid; auscultation, however, revealed considerable dullness, but no splashing sound observed on first examination. Mare continued to feed sparingly; temperature remained 103 F., for few days longer, when suddenly it registered 105 F. her appearance did not at all please me. I now auscultated lung area again, and concluded from extreme dullness and splashing sound on left side, there was fluid there; performed paracentesis thoracis on this side, removed pail and half of fluid. Again my patient improved and took rest. The severe and prolonged illness, however, proved too much. She became considerably weakened, gradually ran down, and died on December 13th, 1900.

Post-mortem. Lungs inflamed, still contained air, pleura adherent in nearly all its entirety to both chest walls; ante-mortem clot in auricles of heart, no fluid in either pleural cavity; kidneys highly congested and very friable.

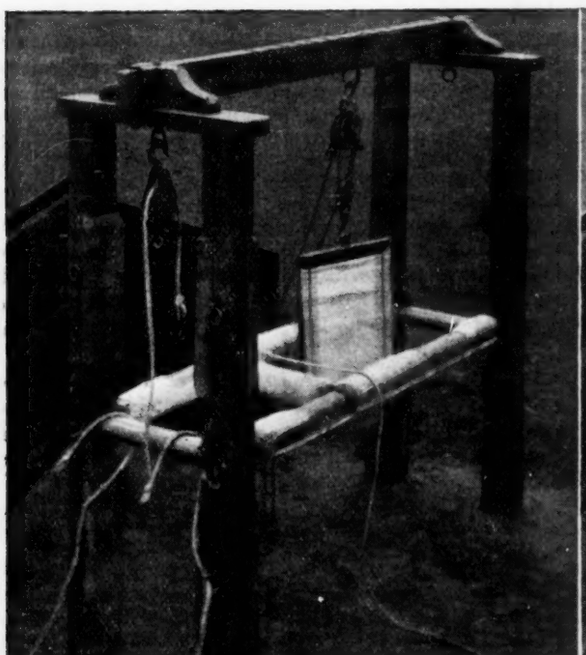
Remarks.—This case, as you will note, lasted one month. The mare never lost a lot of flesh, and in the earlier stages did not appear very much amiss. Thinking it may be interesting to your readers, on account of duration and the slow manner in which pleurisy was manifested in this instance, is my sole reason for reporting the case.

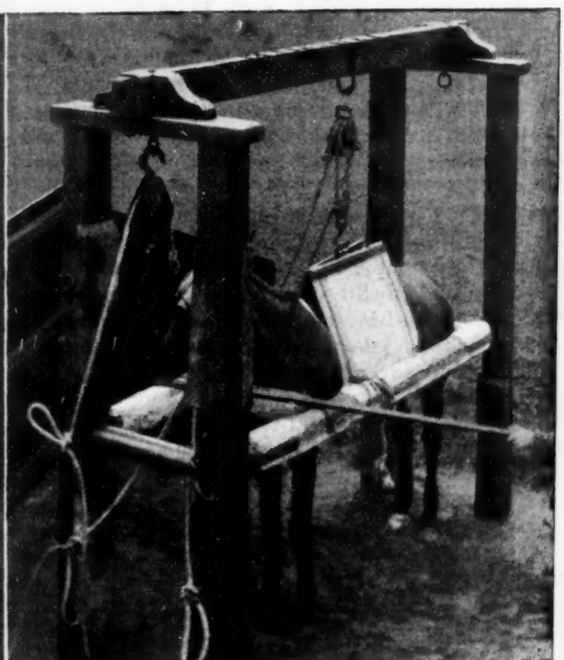
ALBERT MARSHALL, M.R.C.V.S.

Plymouth.

OPERATING STOCKS.

On seeing the enquiry of S.V.D. in *The Record* of December 22nd for the description of stocks, I had photos of the stocks *I am using* taken, and enclose them for reproduction in *The Record*. I have had the stocks in use since last June and during that time have found them invaluable. A horse is put into the stocks as easily as into a railway horse box, and horses which have been used to travelling by train walk into the stocks quite naturally and when fixed cannot possibly injure themselves, and nine out of ten of the operations which a country practitioner is called upon to perform can be accomplished with comparative ease, and such operations as firing, castrating, docking, neurectomy, tracheotomy, etc., are converted from a toil into a pleasure to say nothing of operating for poll evil, fistulous withers, or canker.





I was unfortunate enough last winter to break one horse's back while firing and another horse's thigh while castrating (both thoroughbreds) within a month in the recumbent position, and determined to have no more of that if I could possibly avoid it, and mentioning the fact to Mr. E. H. Leach, F.R.C.V.S., of Newmarket, he recommended his stocks to me and after I had seen him operate in them at Newmarket I lost no time in having a set fixed up at my place, and have used them for upwards of 30 horses since, mostly thoroughbreds, without the slightest hitch.

While firing or doing other operations to the legs it is advisable to place a hobble round each hind pastern and fasten them by means of ropes to each corner post close to the ground as the horse is liable, if the legs are not so fastened, to get his hind legs forward and then lifting them off the ground to lie in the slings with legs drawn up, but so long as the hind legs are fastened backwards this is impossible. To illustrate the ease with which the stocks are manipulated, I may say that I castrated a two-year-old thoroughbred with no other assistance than that of my groom who held the twitch. At the same time it is advisable to have two assistants as the horses occasionally require pushing in as they do into a horse box.

The stocks are patented by Mr. Leach who takes £10 Royalty, and were erected for me by a local builder, Mr. Miller, of Minting, near Horncastle, at a cost of £20, who has plans and would undertake to fix up the stocks for any member of the profession requiring them. The posts are inserted six feet into the ground, and the floor is of concrete with transverse bars of oak let in to prevent the horse's feet slipping; these, however, do not shew in the photo as I have the floor covered with sand.

In conclusion, I wish it to be distinctly understood that the stocks *are not my invention*, also that in justice to Mr. Leach (*the inventor*) I should like to add that he is not making use of me to advertise his stocks, as he is not aware that I am sending these notes to *The Record*.

R. W. CLARKE, M.R.C.V.S.

Wragby, Lincs.

A FRACTURED ILIUM.

A week ago I was called to see an aged mare, she was standing in a stall sweating profusely, the near hind leg back, fetlock flexed and touching the ground; a very large amount of swelling all down the quarter extending under the flank. She was unable to put any weight on the affected limb, and on attempting to turn round she went down and was unable to rise.

On post-mortem I found a complete fracture of the anterior iliac spine, about four inches of it was hanging loosely from the ilium, and all around this part to down below the stifle was a mass of coagulated blood.

I imagine the mare must have been sleeping in a standing position and fallen against the stall, although I could find no trace of external injury.

E. Morgan.

Faversham.

FISTULOUS WOUNDS.

In asking space for a few remarks on this subject I would first say that I have discovered nothing new, but have made a somewhat new use (perhaps?) of an old instrument.

An old standing fistula with its orifice at a point opposite the anterior border of the scapula, and about one-third from its inferior extremity. It had been laid open—so I was informed—by "a knife with a pea on the end of it"; "burned with a red-hot skewer" and plugged with caustics, but all to no purpose.

Introducing a dog catheter I had with me, it was found, as with some other fistulas that I have seen in this region, to curve round the blade bone and doubtless lose itself in the loose tissues under the subsacpcularis muscles. Bethinking me of the famous Hibernian fowling piece whose merit consisted in shooting round corners, I deemed the principle applicable to this case; if, instead of a charge of shot, the actual cautery was first employed, and next perhaps a potent caustic. An iron rod 3-16ths of an inch in thickness was heated in readiness. The catheter again employed as a finder or director; this time withdrawing it in such a manner as to retain the shape and direction of the fistula, and having it held in front of me while I bent my rod to pattern and reheated it. It was then made to follow the canal until it came to a full stop.

A piece of thin metal tubing was subsequently bent to the same shape as the iron, introduced as above described, and then with a small-nosed I.R. ball syringe, escharotics injected. A slough, a fair sample of thick pus, and granulation followed. The wound has not re-opened after many months, and one may hope that the treatment was effectual. I say "hope" as no doubt many of your readers have seen these beastly things recur after a very long time.

Harold Leeney, V.S.

PUNCTURED WOUNDS OF THE SHOULDER AND CHEST WALL.

These regions seem to be the most frequent seats of punctured wounds. It is often difficult to give a prognosis in such injuries. The trachea, the œsophagus, the chest cavity may be injured or pierced. Wounds between the chest wall and shoulder may be complicated by injury to important blood vessels and nerves. Punctured wounds in the shoulder may cause fracture of the scapula, ostitis, or periostitis with great pain and high fever. Dyspnœa from stenosis of the trachea as a result of injury ought to be borne in mind when performing tracheotomy. I once saw a case where stenosis of the trachea (only brought to light on post-mortem) was present at the terminal end of the trachea (probably due to an old injury to the chest wall) where tracheotomy had been performed above the stenosis with no beneficial result.

Case I.

A stableman inflicted a punctured wound with a hay fork extending to the scapula in a van mare. There was great œdema of the shoulder during the first four or five days. This yielded to hot fomentations and injections of chinosol. Pus formed and burrowed right down to the point of the elbow. The mare was cast and chloroformed, a good dependent opening was made at the point of the elbow and about a pint and a half of pus made its escape. Two good setons were put through the shoulder extending from the originally inflicted wound in the postea spinatus muscle and brought out through two openings in the caput medium muscle etc. A big tub full of dilute Jeyes' fluid was suspended to a beam in a loose box. Two tubes of vulcanite were setoned into the wound, and by means of an indiarubber tube coming from the tub and fastened on to the vulcanite tubes a constant stream of antiseptic was sent through the wound. The mare made a good recovery and was discharged in the space of forty days.

Case II.

A cob was horned by a bullock and a punctured wound inflicted between the shoulder and chest wall. This wound healed badly although injected with chinosol and zinc chloride. After treatment for about six days the cob became obstinately lame on the near hind leg and a swelling appeared close to the vagina and rectum. Suspected pyæmia and examined the animal carefully, but there was no subabnormal swelling or swelling of lymphatics, and no rise of temperature. The cob walked into the yard after the accident sound except on the wounded leg. Made an incision into the swelling and pus streaked with blood made its exit. The cob was slaughtered after 18 days, and on post-mortem there was a comminuted fracture of the tuber ischii. The full history obtained after the post-mortem was that when horned by the bullock the cob fell back on the curb stone on the point of his buttocks and doubtless this was when the fracture occurred.

Case III.

A hunter with a punctured wound between the chest and shoulder caused by a stake was brought into the infirmary. He had walked two miles after the injury was inflicted. Emphysema extended from the shoulder right up the neck and back to the haunch, in fact one side of the animal was quite blown up. The wound was injected, the skin punctured and some of the air let out. In a week's time much pus formed and was given an exit just above the knee on the inside of the leg. Two setons were put through the wound on the inside of the leg, one extending from the junction of the chest wall and forearm to the opening above the knee, and the other from the anterior to the posterior of the forearm at the junction with the chest and on the inside of the forearm. The wound was well injected with chinosol and zinc chloride and the mare did well. The emphysema, which was the most extensive I have ever seen, gradually disappeared without active treatment.

Provided good dependent openings can be made, good drainage established, and constant irrigation or frequent injections made, punctured wounds in the above regions do well provided no important structures are injured. The value of zinc chloride, after the evacuation of pus, as a fluid injection in such wounds cannot be over-estimated.

M.R.C.V.S.

A RUPTURED VESSEL.

On December 4th I was called at night to visit a three-year-old cart filly.

The history of the case is as follows: She went to work in the morning, and to the forge in the afternoon to be shod for the first time. She was very troublesome to be shod, plunged about very much, reared up, then fell down and would not get up, but lay there while the men shod two horses. They were going to dinner when she got up (she bled at the nose and they applied cold water to her head when down.) They had put her fore shoes on and were doing her hind ones. When she got up they sent her home, about a mile, and I saw her about 8 p.m. Her pulse was very weak, and could not be felt at the jaw, but could just feel her heart beat at the side. She looked very white (bloodless) in the eye, her breathing was quick, and a thin sanious puriform discharge flowed from one nostril, which was most offensive. Her body was well nourished and full of muscle. I could not detect anything wrong by listening to her lungs. She would not eat anything, her bowels acted all right. She only coughed a few times while she lived. The owner had bought her about two months previously, and she worked half-a-day nearly every day.

Her pulse remained about 60 a minute, and she fed badly until December 15th when she dropped down dead. I made a post-mortem examination and found a large quantity of very dark fluid blood in the thorax from rupture of a large vein (pulmonary) close to the heart, and thrombosis in the right side, one of the largest clots of fibrine I have seen in the heart, about three inches in diameter by 1½ inches thick. A solid yellowish fibrine which, in my opinion, had been there for some time, causing numerous pyæmic abscesses in the lungs about the size of large walnuts. I also found a quantity of pus in the sinus (maxillary) on the right side, about a teacupful, where the awful smell came from, and perhaps an abscess had burst in the lungs at first. The ruptured blood vessel was plugged with coagulated blood, and the muscular part of the heart was very thin and weak.

It seems extraordinary that the filly had so much flesh on her, as it is most improbable that all these changes could have taken place in eleven days. No ordinary rupture of a blood vessel would produce such an awfully offensive smell directly, such as there was when I first saw the filly on December 4th with a nasty, sanious, puriform discharge from one nostril which would not have resulted from any freshly ruptured blood vessel in a healthy animal. Therefore I came to the conclusion that the filly had not been sound for some time, and that the severe struggling at the forge hastened its termination, all going to prove that the clot was in the heart at the time, and parts of the clot had already produced embolism pyæmia. The brain was perfectly healthy, and there was no fracture of the head.

W. H. Crowhurst, F.R.C.V.S.

ŒSOPHAGEAL DISTENTIONS.

I have read with much interest the cases of choking reported in *The Veterinary Record* and am tempted to report the following case.

Carriage horse, 16 hands high, after drinking about a quart of water œsophagus became distended, and was full of the water drunk. I estimated the distention of œsophagus to be two inches in diameter and 12 to 14 inches in length.

The distention disappeared in about quarter of an hour. This condition existed for three days previous to my first visit. I requested the groom to let me see the horse drink water as it had been accustomed to do.

The horse was taken out of the stable with a halter and taken to a watering trough in the yard. The trough was lower than is usual. When filled the surface of water would be about two feet from the ground. The horse, after drinking a small quantity, raised its head and the above swelling presented itself and took about a quarter of an hour to pass off. Horse was then offered water in a stable pail placed on the top of the manger. After taking a few mouthfuls the swelling reappeared with the same result. Requested groom to add a little warm water to that already in the pail.

Horse drank freely without swelling reappearing. I then requested the groom, when watering this horse, always to add a little warm water. When this was done no swelling appeared, and the horse rapidly improved in condition.

I presume this swelling to be the result of partial paralysis of the nerves supplying the œsophagus caused by drinking cold water.

John M. Stewart, M.R.C.V.S.

WOUND AND CONCUSSION OF THE BRAIN.

Subject.—Bay Waler, male, five years.

History.—Very wild while unshipping, broke away and galloped madly against the side of a railway truck and fell stunned, and supposed to be dead, three hours later, at 4 a.m., was found to be still alive, was raised with difficulty and walked two miles to hospital, falling frequently, and rambling in gait. On arrival at hospital at 6 a.m. was placed in large loose-box, and after staggering twice round the box, offside to wall, fell on offside; pulse thready 90, breathing too rapid to count satisfactorily, weak; no stertor; temp. 105° Compound comminuted fracture of both frontal bones covered by triangular flap of skin, the legs of triangle being the severed parts 1 and 1¼in. respectively.

Treatment.—Wound cleansed with warm 5 per cent. solution of pot. permang. and several fragments of bone removed. A pad soaked in 5 per cent. solution tr. calend. applied, and ice kept constantly to poll during the day.

Mare remained prostrate for three days; after first day was given a quart of thin oatmeal gruel as a drench three times a day, and treatment continued. Pulse, 55-46; temp. 103·6 101·8; respiration 16-14.

4th day.—Mare rose about midday, drank a fair draught of water, and ate a little hay; in the evening took hay and bran mash. Discontinued ice, dressed with cold permanganate solution, applied pad tr. calend. 5 per cent. Pulse 48, temp. 101·2, resp. 9; gait rambling.

5th to 8th day.—Gradual improvement.

9th.—Discharge of pus from left nostril, syringed with pot. permang, daily.

11th.—Distinct lameness off fore at walk, gradually decreasing daily, nothing in limb to account for it, cause supposed to be in brain.

15th.—Nasal discharge ceased, discontinued pot. perm. and calend; applied ac. borac as dry dressing daily.

24th.—No lameness apparent, wound healed.

Result (42nd).—Mare passed into Army Remount Department as sound.

Notes.—An apparently hopeless case will often pull round if properly nursed. Medical treatment is of second account.

THE DOCTOR SAHIB.

SOUTH AFRICAN HORSE-SICKNESS: ITS PATHOLOGY AND METHODS OF PROTECTIVE INOCULATION.*

By ALEXANDER EDINGTON, M.B., C.M., F.R.S.E.,
Director of the Colonial Bacteriological Institute.

Continued from p. 399.

In the Cape Colony proper, this disease does not occur in an epidemic form annually: for reasons, not yet clearly understood, the Colony is, more or less, free from an annual visitation, although, when it makes its appearance in epidemic form, the mortality is frightful. In Rhodesia, the Transvaal, the Free State and areas lying within the same parallel it occurs every year, and in Rhodesia, where observations have been made, the annual mortality is more than 90 per cent.

From time to time I have kept you informed of the advances which have been made and the methods with which I was working. These, however, were never more than tentative; thus the first method was one which promised to give a certain percentage of fully protected animals with, however, a heavy attendant mortality in the process. The second was that by which an attenuated virus was obtained either by passage through a partially protected animal or by the adoption of certain laboratory methods carried out *in vitreo*. This latter method had an advantage in being attended with slight mortality, but was unsatiafactory in so far as no definite assurance could be given, in regard to any particular animal, that it had been fully protected. To assure oneself of this it was necessary, finally, to inoculate with blood of the highest virulence when, if the animal was protected, it resisted this inoculation, but, on the other hand, if not so protected, it would die.

Under the operation of this method it was clearly demonstrated that the more frequently the animals were inoculated with the attentuated virus the better was their chance of being protected. This system was, nevertheless, most tedious, and, in an area infected with the disease, necessitated the animals being kept away from sources of possible infection for long periods of time.

One of the main difficulties in regard to this disease with which I have had to deal, and which I am happy to say I have finally overcome, was the extreme variation in susceptibility of different horses.

The virulent disease, whether communicated naturally in the veld or by inoculation, has an energy so great, practically speaking, that no horse can withstand it. When, however, the virus has been attenuated a different condition obtains. Now, one finds that the same attenuated virus which may kill some animals will only set up a mild fever in others, and, in a considerable proportion of the remainder, produce no obvious effect. These peculiar differences might well be compared to crushing walnuts with a steam hammer on the one hand and with light nut-crackers on the other. In the former case no resistance to the force of the hammer would be observable, and all would be crushed alike. When, however, the crushing force was reduced to that obtained from the nut-crackers, it would then be found, whilse some were easily cracked, that others would offer considerable resistance.

The principle, which I was endeavouring to apply was that of inoculation, first with a very attenuated virus, and, subsequently, with virus which had been less attenuated.

If we could ensure an *exact gradation* between the different samples of virus, then the method would have been perfect. Unfortunately no means existed by which the true value of an attenuated virus could be determined, because, *as the reaction to attenuated virus varies enormously from animal to animal*, no animal exists upon which satisfactory tests could be made.

Very elaborate experiments were carried out with the serum of animals which had recovered from the disease. These resulted in showing that no curative effects could be looked for from this material, even when used in enormous doses, and that the substance possessed no appreciable antitoxic property.

I then determined to test serum taken from animals which, after recovery, had been re-inoculated, at intervals, with increased doses of virulent blood. After the last inoculation a period of at least eight days was permitted to intervene, previous to bleeding the animal and collecting serum. This serum, when used in the presence of active infection, set up a Blackwater, or Hæmoglo-

* From Report of the Director of the Colonial Bacteriological Institute for the Year 1899.

binuria, which, if the infection was virulent, invariably ended fatally.

Still later I made use of serum from animals, as in the last case, but which, after the final re-inoculation, had been permitted to rest for a long period of time, and then reinoculated with a small dose of virulent blood.

Blood of the highest order of virulence is carefully standardized and preserved. I have proved that the virulence of this material can be maintained for over two years absolutely unchanged.

Standardized serum can be supplied which, bottled by careful aseptic management in the presence of an antiseptic, can be kept for long periods of time.

A definite amount of this virulent blood is mixed with 50 c.c. of serum and injected subcutaneously; some days later 30 c.c. of the same serum with the same dose of blood is injected; at a later date the procedure is repeated, with a reduced dose of serum, and 14 days later pure virulent blood is injected.

I am happy to say that this method leaves little to be desired, and affords a perfect and complete solution to the problem of protecting horses which have to live in unhealthy districts in South Africa.

The method, as will be noticed, requires that inoculation shall be carried out in each animal four times, and it may be asked whether it is not possible to arrive at the desired end with less trouble. To that question I should undoubtedly say that in many cases the process might be shortened if the animals were carefully watched and their temperatures carefully registered. It is, however, to be noted that if the method is carried out, as I have arranged, animals can be fully protected *without setting up any severe febrile reaction.* If the method is shortened, then one has to recognise that the risk of high fever has to be met, and, if it ensues, that the animal will have to be carefully nursed.

As it stands, therefore, we have a method which approaches the standard of almost *absolute safety*, while it has proved itself thoroughly efficacious, and, since it must fall to be carried out by individual farmers themselves, I prefer to advise a course which is devoid of great risk rather than one which would demand expert knowledge and guidance.

In regard to the practical application of the method, the installation of heavy machinery necessary to the work, and other arrangements, which are already approaching completion, enables me to anticipate being able to meet any demand which may be made for material and apparatus.

In view, however, of the number of prepared animals which it will be necessary to maintain, some additional stabling will be required, and provision made for a better water supply. I trust, in view of the enormous benefit which must accrue from the application of this discovery, that the Government will approve of such additional expense being incurred.

VETERINARY SOCIETIES.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

MEAT INSPECTION.

By Alfred Holburn, M.R.C.V.S., Chief Veterinary Inspector, Corporation of Manchester.

(*Continued from p. 396.*)

Inspection Prior to Slaughter.

An ante-mortem examination is a valuable safeguard against the sale of unwholesome meat, more particularly of animals that are known by the owner to be diseased, *e.g.*, animals taken suddenly ill at their homesteads. We know that there are diseases which, although very important as regards their effects on the fitness of the flesh for food, are not attended by any gross lesions in the carcase. It is also equally important that the slaughtering of animals should be conducted under the direct supervision of the Inspector. In proof of this, we all know that the inspection of a dressed carcase after the butcher has finished his work, and more especially if the organs have been destroyed, is extremely deceptive.

Modes of Slaughter.

The Meat Inspector may be called upon to advise as to the best methods of slaughtering animals, as this has an effect upon the "setting" and keeping of the meat; and furthermore, we are morally bound not to inflict unnecessary pain.

Stunning Followed by Bleeding.—This is the common method of slaughtering cattle in this country. The chief instrument used for the purpose of stunning is the pole-axe; after stunning the animal is bled by making an incision at the lower end of the jugular furrow, so as to divide the large vessels at the entrance of the chest.

Pithing Followed by Bleeding.—Not commonly practised in this country. The butcher stands in front or a little to one side of the animal, flexes its head and thrusts his knife into the space between the occiput and atlas, dividing the cord at its junction with the medulla. The animal immediately drops and is then bled.

Bleeding without Stunning.—The common method for slaughtering sheep, and in some districts young calves and pigs. This is also the Jewish method of slaughtering all their animals.

Electricity.—A method that has been practised in America, but of which I have had no experience. One interesting feature in its adoption is that it will prove that animals killed by lightning need not be condemned on that account.

Shooting followed by Bleeding.—This is a method which is deserving of more attention. The hard skull of the bull and boar is with difficulty penetrated by the pole-axe, the thick skin over the frontal bone forming a natural buffer, and nothing is more pitiful than to see an animal struck repeatedly before it is rendered unconscious.

Greener's Humane Cattle Killer admirably meets this difficulty. The pistol is simplicity itself. It is charged with a bullet and placed on the middle of the forehead, and by a smart tap with a mallet it is discharged, and its effect is very satisfactory. For the slaughtering of horses I do not think this instrument can be surpassed, and it certainly ought to take the place of the pole-axe at all knacker yards.

After an animal has been stunned, a couple of minutes should be allowed before sticking, to give the blood-vessels time to relax from the systemic shock, in order to favour bleeding. The blood should flow freely, become of a bright scarlet colour on exposure to the air, and should commence to coagulate in about two minutes after being withdrawn, and in about ten to fifteen minutes become a firm, elastic mass capable of being sliced into sections which will retain their shape. About this time also serum will begin to transude out of the clot, which will decrease in size proportionately. Diseases such as anthrax, asphyxia, acute inflammatory affections, etc., alter the normal character of the blood, and interfere with its coagulability.

The amount of blood drawn at the time of sticking varies with the size, age, accuracy of sticking, position of body, etc.; roughly we may say that in the young animal of eighteen months old the quantity of blood will be about two and a half to three gallons, in the three-year-old bullock about four gallons, and in the aged milking cow sometimes four and a half to five gallons. Of

course this does not represent the total amount of blood in the body.

Inspection after Slaughter.

If the inspection is made at the time of slaughter, the organs will be examined as they are removed by the butcher in his customary way of dressing, which is much the same in all animals.

To prevent repetition I may mention a simple rule to be observed in the examination of all organs. Their size, shape, colour, and consistency should always be criticised, also their outlines and relationships, after which one may search for pathological changes. A regular inspection is of extreme importance, as it will help one to trace the development and course of most diseases.

The Feet.—These require examining for injuries, septic changes, morbid growths, eruptions of foot-and-mouth disease, etc.

Intestines and Mesenteric Glands.—The bowels are used as a capsule for our black puddings and polonies. Their calibre and peritoneal covering, and the thickness of their walls should be noted.

The mesenteric lymphatic glands in bovines are to be found running along the mesentery near its distal border, about four inches from the attachment to the small intestines. Their examination should never be overlooked in conducting a post-mortem examination for evidence of tuberculosis, and especially in proving the tuberculin test: intestines should always be condemned when their peritoneal covering or lymphatic glands are diseased.

The Stomachs.—The first stomach is commonly called the belly, and after it has been scalded, scraped, and boiled, it constitutes tripe. The third stomach is not used, but the fourth is also converted into tripe. The average weight of the first stomach is from sixteen to twenty pounds. Some lymphatic glands will be found in the fat near the œsophageal entrance, and in the fissure on its anterior surface. The peritoneal surface of the stomachs is frequently affected with tuberculosis, and the mucous membrane of the fourth stomach with worm tubercles, a description of which is given by Prof. M'Fadyean in *The Journal of Comparative Pathology*, vol. IX., p. 314.

The Liver.—The normal weight of the ox liver is about ten to twelve pounds. It varies, however, very greatly, even in health. It is a common seat of disease, such as inflammatory changes resulting in fatty degeneration, cirrhosis, parasitic infection (fluke, hydatid cysts), abscesses, tumours (carcinoma, cavernous angeiomata, etc.), tuberculosis, and disseminated bacterial necrosis.

In the liver of the rabbit the parasitic infection known as coccidean disease is sometimes met with and mistaken for tubercle. The liver is studded with greyish white nodules varying in size from a pea downwards, with purulent contents which are found on microscopical examination to contain great numbers of the coccidium oviforme. The individual coccidia are egg-shaped bodies, possessing a shell wall with protoplasmic contents. In some seasons an epidemic form of this disease occurs in rabbit warrens.

Disseminated bacterial necrosis has also been mistaken for tubercle. The two diseases, however, are quite easily distinguished. Briefly, in this disease necrosed patches or areas are irregularly distributed through the liver substance, varying in size from a walnut downwards, with a well-defined outline which is not circular; in colour the patch of dead tissue varies from brown yellowish to a dirty grey, and in consistency it resembles putty or unripe cheese, is not purulent, and cannot be easily enucleated from the surrounding tissue. On the surface of the liver the nodules are slightly raised, yet somewhat flattened on their upper aspect, and firm to the touch. The lymphatic glands will be free from tubercular deposit. It may be also said that the liver is usually very much enlarged. The hepatic glands are to be found at the portal fissure.

The Spleen.—Commonly called the melt. Its external surface is frequently affected with tuberculosis, and occasionally the splenic pulp also. This organ is important in the diagnosis of anthrax; particular attention should therefore be paid to its volume and consistency. Its lymphatic glands are usually left attached to the left side of the stomach.

Uterus.—Also termed the calf-bed or lamb-bed as the case may be. Inflammatory diseases, tuberculosis, and septic conditions are chiefly to be looked for.

Heart and Lungs.—These organs are removed from the chest, together with the mediastinal tissue and fat attached. It is important that the following lymphatic glands should be looked for, namely:—

(1) *Tracheal Glands.*—On the course of the trachea, on its upper surface.

(2) *Cardiac Glands.*—At the base of the heart, and must be looked for before the organ is severed from the lungs.

(3) *Bronchial Glands.*—At the bifurcation of the trachea into the two bronchii. The right gland is sometimes torn away, but the left is always to be found by cutting down on the left bronchial tube.

(4) *Mediastinal Glands.*—This group of glands will be found in the form of a chain running in the mediastinal tissue between the right and left lungs on the œsophagus. They are of large size.

The lungs must not be stripped of their fat until these four groups of glands have been examined, otherwise they will be removed. Their examination is necessary in all inflammatory and blood diseases, and in tuberculosis they should never be overlooked. They are frequently found affected when this disease is not apparent in the lung tissue—an item to be remembered in making post-mortem examinations after the tuberculin test. All other diseases of the lungs and heart are of course to be looked for.

The Mammary Glands, or Udder.—The mammary glands are two in number, and are placed side by side on the middle line of the abdominal wall in front of the pubes. They form here a single mass with a furrow between them; each gland consists of a fore and hind quarter. The term "udder" is used to include both glands.

The udder of the cow when boiled constitutes an article of diet in the tripe shops. The examination thereof is important. Each quarter should be criticised in respect of volume and consistence, and an incision should be made from the ampulla right through the whole gland, dividing it into halves. The milk ducts and gland tissue will then be well exposed, and its peripheral borders and ducts should be carefully examined.

The Lymphatic Glands of the Udder.—Situated at the supra-posterior border of each gland, near the entrance of the blood vessels—that is to say, above the attachment of the hind quarters. Their examination is extremely important in all inflammatory diseases, tuberculosis, and septic affections of the udder.

Pharyngeal Glands.—Situated at each side of the pharynx, and related to the inner surface of the great cornu of the hyoid bone near its attachment to the skull. They are easily got at by placing the head on a table, face downwards, with its base towards you, the examiner raising the cut end of the trachea with the left hand, feeling for the hyoid bone, and make an incision. They are frequently seen without any dissection when the tongue is removed.

Submaxillary Glands.—Found at the angle of the lower jaw, at the inner side of the attachment of the sterno-maxillaris.

Parotid Glands.—At the anterior border of the parotid salivary gland, resting on the masseter muscle.

Sub-occipital Glands.—At the base of the occipital bone, near the condyles.

Mammary or Superficial Inguinal.—These have been already alluded to. In the bullock they are to be found at the base of a mass of fat known as the "cod" in the inguinal region, and are readily brought into view by making a bold incision in this fat from the inner surface and cutting down upon the abdominal tunic. In the pig these glands are to be found in the subcutaneous fat above and a little posterior to the last teat in the inguinal region.

Deep Inguinal Glands.—This large group of glands is to be found at the pelvic inlet, in the distal edge of the loin suet and on the course of the external iliac artery about midway between its departure from the aorta and its entrance into the thigh muscles.

Iliac Glands (External and Internal).—These are related to the arteries of the same name at their origin about the last lumbar vertebra.

Sacral Glands.—Situated at the floor of the sacrum, between the two internal iliac vessels.

Lumbar Glands.—These may be described as a superficial and deep set. The superficial chain, which perhaps belong to the large bowels of their mesentery, are to be found in the fat in front of the large vessels in this region. The deeper set are situated close on to the lumbar vertebra.

Another group of glands is to be found in the fat of the loin, resting on the muscles of the flank a few inches anterior to the deep inguinal, and at the point where the circumflex iliac artery divides into its anterior and posterior branches.

Renal Glands.—At the origin of the renal artery, about the second lumbar vertebra.

Coeliac Glands.—Between the pillars of the diaphragm, at the origin of the coeliac axis.

Popliteal Glands.—These glands are to be found in the popliteal space, and are readily got at by cutting through the thigh muscles immediately above and posterior to the stifle joint (femoro-patella articulation), on the track of the femoro-popliteal artery.

Precrural Glands.—Of large size, and found in the groin fascia The landmarks for its section are the superior border of the panniculus carnosus, a few inches from its posterior angle at the groin, and the fascia intervening between this point and the anterior muscles of the thigh.

Sub-dorsal Glands.—These will be found on each side of the aorta, from about the fifth to the last dorsal vertebræ. Most of these glands are frequently removed in dressing, but two or three will be generally found from the tenth to the thirteenth vertebræ.

Intercostal Glands.—Situated between the ribs at their junction with the vertebræ. In health they are very small, probably not larger than a pea. In disease, however, they may be the size of a hazel nut.

Supra-sternal Glands.—Situated between the costal cartillages of the first six ribs, under the triangularis sterni, on the course of the internal thoracic artery. In front of the thoracic side of the insertion of the diaphragm, across the ensiform cartillage, will be found a gland superficially placed.

Prepectoral Glands.—This large group of glands will be found at the entrance of the chest, on the surface of the first rib, if not removed by the butcher. A deeper gland, however, will always be found in the fat immediately anterior to the first rib, and beneath the scalenus muscle, resting upon the posterior deep pectoral.

Brachial Glands.—These glands cannot be conveniently examined unless the fore quarter is divided longitudinally. They can, however, be exposed by removing a portion of the second rib, when they will be found in the fat beneath, resting on the teres major near its insertion into the humerus.

Prescapular Glands.—Found in the mass of fat immediately anterior to the shoulder joint, under the mastoido-humeralis muscle.

An examination of the lymphatic glands is extremely important in tracing the origin, course, and extent of disease; consequently their normal size, consistency, and colour should always be taken into account. There are very few diseases or conditions which render the carcase of any animal unfit for human food but what produce some abnormal changes in these glands. This is evident when we remember that the lymph that circulates through these glands is simply diluted blood plasma, which is constantly exuding from the blood capillaries into the interstices of the tissues of the body, from which the lymph vessels arise. Other matters than those of normal blood plasma may find their way into the lymph-stream, such as the waste products resulting from the metabolism of tissue, a great part of which is purely excrementitious. It may also be mentioned that changes in the character of lymph correspond very closely with changes in the character of the blood.

The lymph glands have therefore a defensive as well as an elaboratory function to perform. And when over-charged with effete matters, as in all acute inflammatory and blood diseases, they become swollen, congested, or inflamed, and even broken up to the consistency of a rotten pear.

Changes in the lymphatic glands may be local or general according to the extent of disease in the system producing these changes, as are observed in tubercle, udder diseases, injuries, etc.

The Examination of the Carcase.

It not infrequently happens that the Meat Inspector has got to pronounce as to the fitness or otherwise of meat for human consumption simply upon the examination of the carcase, which is a very unsatisfactory situation. The consistency, colour, and odour of the flesh, together with the condition of the lymphatic glands, will in most cases, however, declare the existence of disease.

Before making a section, the following scheme might be observed:—

I. *Name animal.* II. *Sex.* III. *Age.* IV. *Nutrition.*

V. *Surface abnormalities, e.g.*, post-mortem lividity, hypostatic congestion, œdema, subcutaneous hæmorrhages, injuries, etc.

VI. *Condition of pleura and peritoneum.*

VII. *Indications of imperfect bleeding,* and the trickling of dark semi-coagulated blood, as in anthrax.

VIII.—*Fat*: quantity, consistency, colour, etc.

IX. *Kidneys.* It is generally convenient to examine these now—in the old cow they are frequently found diseased.

X. *Rigor Mortis.* The quartering of a carcase, beyond dividing the vertebral column, should be deferred until it is set or *rigor mortis* is complete, more especially so if there is any chance of a portion of the carcase being passed.

Setting.—*Rigor-mortis* or post-mortem rigidity is a contraction of the muscles producing a general stiffening of the body (carcase) and is due to the coagulation of myosin.

The process is said to be modified by:—

(1) State of animal before slaughter, *e.g.*, excited or calm.
(2) Presence or absence of disease.
(3) Temperature of surrounding atmosphere.
(4) Humidity of surrounding atmosphere.
(5) Method of slaughter.

In order to have sweet bright meat every facility

should be given to favour the setting of carcases, and in obtaining this object it is necessary to consider the following as affecting decomposition :—

(*a*) The purity of atmosphere.
(*b*) The principles of evaporation.
(*c*) The reduction of temperature.

Atmosphere.—The necessity of a pure atmosphere is self evident.

Evaporation.—The slow production of vapour from a moist surface.

This is necessary in order to dry, make marketable, and secure the keeping of, meat.

The rapidity of this evaporation is influenced by :

(1) Temperature.
(2) The quantity of moisture in the surrounding atmosphere.
(3) The renewal of the atmosphere.
(4) The extent of surface of evaporation.

Increase of temperature accelerates the evaporation by increasing the elastic force of vapour. Secondly, no evaporation could take place in an atmosphere already saturated with vapour of the same liquid. Thirdly, as to the renewal of atmosphere, it is evident that if the air surrounding a liquid is not renewed it soon becomes saturated and evaporation ceases.

Reduction of Temperature.—This is effected by the conduction and radiation of heat.

By conduction is meant that heat is transmitted into a body by its gradual communication from one material particle to another until the temperature of the whole mass is raised, and by the same process the body becomes cold again.

Meat is a bad conductor of heat, that is to say roughly, it admits heat with difficulty and gives it up with difficulty.

Radiation, or the emission of heat from a body, plays an important part in the reduction of temperature or the cooling of a carcase, at any rate until an equilibrium is reached with the temperature of surrounding bodies. It is necessary, however, to watch that this surrounding temperature is favourable to the keeping of the meat. The practical purposes achieved by these considerations go to show that a natural phenomenon must not be interfered with, but rather that great care should be taken to assist its completion, and pursued to a point that will improve and help the economy of the meat trade, which is no small medium of exchange in this country. By way of further illustration, I may mention that in the heat of summer we occasionally find that decomposition is established in the centre of large hindquarters of beef about the second day after being dressed. The explanation lies in the fault of cooling. Frozen hindquarters of beef are sometimes found bad in their interior when taken out of the cold chamber. The fact can be explained in this way. The meat has been put into the freezing chamber in a warm state, evaporation and radiation from the surface has been checked, and a capsule of ice being produced in this way a battle is fought between the imprisoned heat inside and the frost. The result is that before the heat is overcome fermentation has been established.

The necessity of a frequent change of air is also illustrated by the adoption of those refrigerators or ice-boxes used by butchers, confectioners, restaurants, hotelkeepers, etc.

Warm meat put into these closed-up boxes, although charged with ice, is frequently found bad in the interior, owing to the cooling phenomena being delayed.

It may also be interesting to remark with regard to frozen or chilled meat that, after exposure, its surface soon becomes moist or wet, this being more marked in a humid atmosphere. This is due to the fact that the layer of air immediately in contact with the chilled body is cooled below its point of saturation, and therefore deposits a portion of the vapour it contains, just as when a bottle of cold water is brought into a warm room it becomes covered with moisture owing to the condensation of aqueous vapour upon it.

Sectioning the Carcase in the Case of Cattle.

This should be done as far as possible in a customary manner, as undue mutilation is undesirable should any portion of the carcase be passed. Different districts have slightly different methods, and the butcher can generally be allowed to divide in his own way, so long as it permits of the purposes of inspection.

In Manchester the fore and hind quarters are separated by commencing at the junction of the first and second lumbar vertebræ or the sixth joint from the sacrum. The muscular area exposed is not large, and only occasionally will it suffice for the investigator. The hind quarter should next be cut by making a complete section through the muscles of the thigh, commencing about an inch or so from the ischio-pubic symphysis, sawing through the head of the thigh bone (femur), after which the knife is directed in a longitudinal manner through the muscles of the flank. This is a customary section in the trade, and it is the most satisfactory for the examiner, inasmuch as it exposes to view a large muscular area, and one which is frequently the seat of abnormalities.

The fore quarter should be divided by a longitudinal incision down through the shoulder joint, in order to expose the thick muscles and the joint cavity. After this section it is easy to expose the brachial and prescapular lymphatic glands.

The purpose for which these sections are made is to ascertain the colour, odour, and consistency of the flesh, evidences of medication and putrefaction, and any other morbid change, such as parturient injuries, inflammatory conditions, œdema, hæmorrhages, purpura eruptions, transudations, emphysema, parasites, and whether death was due to natural causes or slaughter.

With reference to inflammatory fluids in the flesh, I may mention that the increased transudation of liquids into the tissues is a feature of all inflammations. This infiltrated fluid causes the muscles to have a gummy consistency, in consequence of the albumen it contains, and it is thus easily distinguished from ordinary dropsical fluids.

The muscles, therefore, of an animal that has suffered from any acute inflammation will be found dark, owing to imperfect oxidation, and their normal texture destroyed by the infiltration of an albuminous fluid, which imparts a gummy sensation to the fingers. The lymphatic glands will also be congested.

Chemical tests and the frequent use of the microscope, it must be remembered, are valuable accessories in solving the problems of disease.

DISCUSSION.

Mr. HUGHES, in thanking Mr. Holburn for his instructive paper, confessed to having learnt more about lymphatic glands than he had done before. The importance of an acquaintance with them would be recognised by all. Meat inspection was, no doubt, becoming the question of the day, and veterinarians ought to hold their place as being experts in it. They would readily recognise that trained veterinary surgeons, who were most acquainted with the diseases of animals, were in the best position to judge of the wholesomeness or unwholesomeness of the meat. As to the despatching of animals, nothing was, in his opinion, more effective than a good revolver. Country practitioners in his district, when called upon to assist the medical officer of health, very often had not the opportunity of inspecting the internal organs, consequently they were at a disadvantage in arriving at a right diagnosis. Often they had to judge from external appearances of the carcase, and the question arose as to the influences which render the ex-

ternal appearances of value. For example, the yellow appearance of the carcase, it was well known that the food of the animal had an important influence upon it. He presumed the fat of an ox fed with oil-cake and cotton-cake would be yellower than that of one fed with milk and roots. Again, the fat of sheep fed with oil-cake and cotton-cake would be yellow, and it was important to bear in mind that the yellow appearance of the fat of an animal was also produced by "flukes" or anything which interfered with the function of the liver. The manner of bleeding had a marked effect on the appearance of a carcase.

Mr. WOLSTENHOLME expressed the pleasure with which he had listened to the paper. He thought that it emphasised the necessity which existed for the employment of veterinary Surgeons as inspectors of meat and milk. Any sanitary officer could determine whether meat was putrid or otherwise, but only a veterinary surgeon, with his knowledge of anatomy and the conditions of organs and parts in health as well as disease, could give a reliable and adequate opinion.

Indeed, this was not stating the case as fully as necessary, for much more than a naked eye examination was often essential. To this end, the addition of a small laboratory was required, with autoclure and ovens for the cultivation of micro-organisms, and with a centrifugal machine for the treatment of milk, etc., prior to examination for tubercle bacilli and other organisms.

Not only was a professional man demanded, but one well up in the latest training in chemical, bacteriological, and microscopical science. He thanked the lecturer for his excellent paper.

Mr. LLOYD congratulated Mr. Holburn upon his effective paper and excellent photographs. Though the essayist had gone thoroughly into meat inspection from a theoretical point of view, he had not mentioned anything about practical abattoir work as regarded the different diseases of animals met with, viz., strangulation, milk fever, foot-and-mouth disease, anthrax, etc. Those were aspects over the different carcases to prove to a skilled inspector what was the cause of death. As a meat inspector, he had often got only the carcase and not the offal, thus making it difficult to come to a correct diagnosis. All would be agreed as to the veterinarian being, or should be, the most competent meat inspector, but, as Mr. Wolstenholme said, there was no doubt that a practical inspection after the theoretical training was necessary to make a good meat inspector. In the last Royal Commission on Tuberculosis it was very clearly brought out that meat inspection was very essential, and it was recommended that all meat inspectors before being considered competent should be forced to pass an examination, but the Local Government Board had not seen fit to do that.

Respecting public abattoirs, he considered that they should be in every large town and if possible in some of the villages. The question, however, arose as to compensation for compelling butchers who had their own slaughter houses to close them and patronise the public abattoir.

Mr. FAULKNER, after thanking Mr. Holburn for his able paper on such an important and extensive subject, emphasized the fact that if the public were to have efficient meat inspection it must be performed by veterinarians, who possessed the necessary qualifications for such work. There was, he thought, a good deal in Mr. Lloyd's remarks about the practical aspect of meat inspection.

Mr. HOLBURN, in reply, pointed out that his paper was on some introductory remarks on meat inspection. It would be impossible in one evening to have entered fully into all the points raised by Mr. Lloyd. With regard to animals being killed or paralysed by lightning, he did not think electricity would necessitate the condemnation of the carcases.

As to black-quarter, this was a peculiar disease—it was not a disease of man but a microbic disease, and the bacilli lived only in the affected part—they were not even in the blood, so that naturally one would think that by removing the injured portion the flesh would be safe. The other thing counteracting that was ptomaine poisoning. Practical experience showed that it had not been traced that any direct death had resulted from eating the flesh of any animal affected with black-quarter. With reference to slaughterhouses they all knew the importance of public abattoirs and would like to do away with private slaughterhouses. In the matter of carcases coming in dressed with no internal organs, it would be a good thing if such carcases were admitted with a certificate from a veterinary surgeon in the country.

Replying to Mr. Hent's inquiry as to the effect of medicines on the flesh, volatile medicines, turps, etc., did impart an odour to the flesh, and in those instances it would be justifiable to condemn the carcase which would be uneatable. Many other medicines, however, did not impart an odour to the flesh. When medecines were given, disease was sufficiently extensive to warrant condemning the carcase.

Mr. S. LOCKE then proposed a hearty vote of thanks to Mr. Holburn for his most instructive paper.

Mr. HUGHES having seconded, the proposition was carried unanimously.

Mr. FAULKNER moved that the best thanks of the Association be tendered to the retiring officers for their services during the past twelve months, and to the President for the able manner in which he had conducted the affairs of the Society.

Mr. TAYLOR seconded and the motion was carried.

EXTRACTS AND NOTES

THREE CASES OF TUBERCULOSIS OF THE SKIN.

RAVENEL (MAZYCK P.) "Three cases of Tuberculosis of the Skin, due to Inoculation with the Bovine Tubercle Bacillus." *Philadelphia Medical Journal*, July 21st, 1900.

The relation existing between tuberculosis in the bovine species and man, and the danger to man from the consumption of products containing the bovine organism, is one of the most important subjects before the bacteriologist and hygienist to-dgy. Bitter discussion has been waged, and extreme statements have been made on each side. Some have gone so far as to assert that residence of the tubercle-bacillus in cattle so changes its character that its pathogenic power is lost for man, and *vice versâ*. The author quotes this opinion only to show the reckless extremes to which men go in the face of strong evidence, and without a single observation to support their view. He wishes "to enter a protest against such unsupported expression of opinion, and to say to those who belittle the danger to man from tuberculosis in cattle, that they are at least exhibiting a lack of precaution in a case where health and life are at stake, which they would consider most foolish in a money transaction, where only dollars were in the balance."

He believes the question is one which can be finally determined only by careful observation of facts and laboratory experiments, and with this end in view, he records the three cases of accidental inoculation of man with the tubercle bacillus from a bovine source.

Case I. A veterinary surgeon, in 1896, whilst making a *post-mortem* on a tuberculous cow, wounded the knuckle of his forefinger. The wound healed badly, and

a nodule formed, which had a tendency to ulcerate. This was excised and microscopically examined by Dr. Ravenel. He could not satisfactorily demonstrate tubercle bacilli, but sections showed a mass of round cells with a considerable number of epithelioid cells, and one large giant-cell, containing many nuclei arranged about the periphery. The nodule recurred after excision, but was ultimately cured.

Case II. Dr. Ravenel's assistant in January, 1900, whilst making a *post-mortem* on a goat which had died after experimental inoculation with a culture of bovine tubercle-bacillus, scratched his knuckle on the broken ends of the ribs. Within half-an-hour the wound was washed out with a 1-1000 solution of mercuric chloride, and sealed. It healed promptly, but about three weeks after became reddened, swollen, and sensitive, especially on motion. It was protected but grew worse, and on February 27th Dr. C H. Frazier excised the nodule, with a margin of healthy skin. With one-half of the nodule two guinea-pigs were inoculated subcutaneously, and the other part was prepared for sections. These sections show an infiltration-process which encroaches on the papillary layer of the skin, some of the papillæ being destroyed. No typical giant-cells can be made out. None of the sections were stained for tubercle-bacilli. On May 5th, one of the inoculated pigs died and the other was killed. Both of them showed a generalized tuberculosis involving the chest-cavity as well as the abdomen.

Case III. A veterinary surgeon whilst making an autopsy on a tuberculous cow, wounded the knuckle of his forefinger. Between three and four weeks after, the scar was noticed to be enlarged, reddened, and somewhat sensitive. As it showed no tendency to improve, but rather grew worse, some six weeks after it was first noticed it was excised by Dr. H. W. Cattell, and the wound cauterized with bromine, since which there has been no return The nodule was examined by Dr. John Guitéras, who demonstrated its tuberculous nature by finding tubercle-bacilli in sections.

The value of cases such as those reported in proving the virulence of the bovine tubercle-bacillus for man has been questioned on the ground that the lesions resulting from inoculation are usually slight and remain localized, the conclusion being forced that the bovine tubercle-bacillus has little virulence for man. The fallacy of such reasoning is shown by the fact that the history of these accidents is that, as a rule, whatever the source of the infection, the resulting lesion remains localized, and seldom leads to systemic infection.

All observers agree that the skin offers a very poor soil for the growth of the tubercle-bacillus, as indicated by the slow evolution of skin-lesions and the small number of bacilli usually found in them. Chauveau failed entirely to infect calves by superficial scarifications and punctures of the skin, the nodules which sometimes formed soon disappearing spontaneously.

Even the guinea-pig, which is one of the most susceptible animals known, resists invasion by the skin. In the experiments reported by Bollinger not once in six series of experiments did he succeed in infecting guinea-pigs by cutaneous inoculation made after the manner of vaccination, though in every case the control-animals, inoculated under the skin or into the peritoneal cavity, became tuberculous.

In general the solipeds—sheep, goat, swine, and dogs resist even subcutaneous inoculation with the tubercle-bacillus, or develope a small tumour which passes away by resolution, or by abscess, no general infection resulting.

The author refers to other recorded cases of accidental inoculations in veterinary surgeons while making autopsies on tuberculous cows. In one reported by Tscherning, of Copenhagen, cure followed excision of the growth, but in one reported by Pfeiffer, the lungs became involved and the man died. The cartilage of the injured thumb was necrosed and the joint cavity filled with a caseous mass very rich in tubercle bacilli.

The author believes these five cases prove conclusively that the bovine tubercle-bacillus is not devoid of pathogenic power for man.

FRANCIS J. H. COUTTS.

—*The Medical Chronicle.*

THE WASTE OF HORSEFLESH IN SOUTH AFRICA.

(*From a Correspondent*).

War is expensive. But, although this is a given axiom, there is no reason why in future, if war is thrust upon us, we should not learn by the present experience to make its conduct as economical as possible. A comparison between the methods employed at the present moment in the furtherance of the South African campaign and the circumstances in which the recent operations in the Egyptian Sudan have been conducted in itself would furnish a wholesome lesson. This is not my intention, All departments of the Army have, during the last few months, come under severe criticism, but the apparently insignificant organisation known as the Army Veterinary Department has escaped notice. It is this apparent insignificance and the small attention which is devoted to this department both in peace and war that have been responsible for the waste of millions of the public money, which have been expended upon the purchase and forwarding of remounts. Now we know that the mounted troops in South Africa have during the past months been remounted at least three times, some units even a greater number of times. The fact that a corps has been remounted should not mean that the services of the animals cast for condition are altogether lost for the campaign and written off in the taxpayers' general "profit and loss" account. Yet this is practically what is taking place, and will continue to take place until the Army is supplied with a veterinary department capable of serving the public interests during a campaign. The Army Veterinary Department is still labouring under the effete system which until recently completely hampered the Army Medical Corps.

The present campaign has shown that the organisation of the Veterinary Department from the beginning was totally inadequate for the work which was required of it. This is no reflection upon the *personnel* of the department. The 50 trained Army Veterinary officers who have been in South Africa are keen and experienced men, and throughout the operations have worked hard to save as much animal life as was possible with their limited organisation. A study and comparison of numbers will make clear the difficulties under which they have laboured. No fewer than 200,000 horses and ponies have already been furnished as remounts ; this number is irrespective of the thousands of draught animals which come under the care of the Veterinary Department. The The Army Veterinary Department organization has consisted of the 50 trained officers belonging to the service, already mentioned, and some 150 civil veterinary practitioners, whose services were hurriedly enlisted after the outbreak of hostilities. Except in the case of the small detachment which came from India, there has been no subordinate service or trained staff to carry out the hospital duties which the officers devised. The duties of this small staff of trained officers have been many. Not only have they been expected to advise as to the treatment of sound horses and tend the sick, but they have been required to assist the Remount Department in the local purchase and the issuing of remounts. Instead of being helped in their work by a trained and

organised subordinate staff, such as exists in India, all that the British organization allows them is a percentage of farriers and shoeing-smith from the ranks of the monted services. The result has been that the whole of the time of the subordinate staff has been employed in carrying out their special functions. Thus, as these men are combatants, the fighting strength of the units from which they have been drawn was impaired, and the invalided horses have gone without the treatment which would in the majority of cases have saved their lives and services, and from a humane point of view alleviated their sufferings.

The authorities may claim that they made amends for their want of system by engaging the services of the civil practitioners whom they have sent to the front. This would hold good if, as is the case with the medical service, the civilian experts thus engaged were drafted into an already existing organization and could work in concert with men of experience upon an approved system. But this has not been the case. In the first instance, the majority of men who thus volunteered had only just qualified, and had no experience of the requirements of military service or tropical ailments and diseases. Consequently a further heavy strain was placed upon the commissioned officers, in the supervision and direction of the work of their willing but inexperienced colleagues.

Between the reckless method employed in the supply of remounts and the want of organization of the Veterinary Department millions of the public money have been poured out and wasted. The selection of animals for mounted work appears to have been made without reflection upon the requirements of the country, its climate, and the conditions of the service therein. Hundreds of animals have been purchased by the remount agents which have been found totally unfit for the work which they were called upon to perform. No class of animal has come under more general condemnation than those which have been purchased in the Argentine Republic. These particular animals are wanting in quality, and have neither the conformation nor sufficient pace to make cavalry or mounted infantry troop horses. The South African bred pony could always outpace them under every condition. Even the better class of animals supplied, English and Australian, have been very uneven. While perhaps 50 per cent. were serviceable animals, the balance were too light to carry 18st., and were more fitted for harness and spring-van work. The draught animals purchased for the artillery have as a whole been a more serviceable class than those supplied to the other arms. But it mattered little what class of animal was purchased. Deterioration set in as soon as purchase was effected.

The shipment of remounts furnishes as great a scandal as the want of veterinary organization at the front. Horses were crowded into ships with insufficient preparation for a long voyage. In the case of many of the batches the animals' feet were never attended to from the day they were purchased until they were delivered at the front. After landing in South Africa the animals were trained up as far as possible in trucks totally unsuited for the work. When taken out of the train the horses were driven along in "mobs" and tied in "heaps" at night, so that many of them found their first opportunity of lying down since their shipment when issued to the troops and transferred to regimental lines. During the halt at Bloemfontein it was no uncommon sight to see bunches of remounts driven through the streets, some with sore backs, others with cut heels, all with feet grown out of all natural proportions, the majority lame simply on account of neglect and want of attention. These animals were rested until, to use a dealer's expression, they could "jog sound." They were then issued to the troops and put at once into the hard work of cavalry campaigning. Later on in the campaign they were not even given a rest until their feet were "pared," but were issued to their units from the very trucks. Is it to be wondered at that such treatment resulted in an early breakdown, and that when no hospital existed for the treatment of sick horses the veldt of South Africa became strewn with what represents millions of money? India has recognised the necessity for veterinary hospitals for its cavalry horses and transport animals; yet the British service is content with an underpaid and undermanned Veterinary Department, which, under the cheeseparing policy of late years, is not organised to cope with even the war stresses of a single cavalry division, much less with the war casualties of 40,000 mounted men.—*The Times.*

CRUELTY CASE AT BATH.

At the Bath City Police Court, before Colonel Vaughton Dymock, Mr. A. G. D. Moger, and Mr. Austin J. King.

John Tucker, of Manor Farm, Woolley, was summoned for causing a bay mare to be cruelly ill-treated by being worked in an unfit state on October 31.—William Derrick was brought up on remand for ill-treating the same.—Mr. H. C. Moore defended Mr. Tucker.—It was alleged by Derrick that when he started in the morning there was no sign of lameness.

Mr. Welch said the horse was suffering from navicular disease of the off fore limb. There was also a sprain of the back leg tendons and a corn. In his opinion it was absolutely impossible that it could have been otherwise than lame when it left the farm.

Mr. Moore said it was for the prosecution to prove that defendant was cognisant that the horse was lame when it left his farm on October 31 in the morning. So far they had only the expert evidence as to its being lame when stopped; but he should also call expert evidence, which would establish the fact that there was a doubt as to when the lameness arose.

Defendant went into the box, and stated that the mare was not lame when it left his farm on October 31.—Harry Ford and John Hiscott corroborated.

Mr. William Sherriff, M.R.C.V.S., assistant to Mr. Aubrey, said he had examined the mare. The lameness was due to inflammation on the corn, as a result of an injury. The corn was a bad one of long standing. With proper treatment the mare would be all right in a week. There was no navicular disease.

Mr. G. W. Haydon, M.R.C.V.S., Midsomer Norton, also spoke to examining the mare. He agreed with the last witness's evidence as to the cause of lameness. He found no trace of navicular disease. The corn was of long standing, and well developed. It was possible for the horse to have such a corn and yet not go lame. When witness saw the corn that morning it had not been cut.

William Owen, smith to Mr. Welsh, said he took off the shoe of the foot in question, and examined the foot. He found a slight corn on the inside of the heel, but not enough to make the horse go lame. He tried all round the foot with pinchers, and touched the corn, but the animal did not flinch. There was no inflammation then. He cut the corn to a certain extent. There was no bruise on the foot.—By Mr. Moore: He had been with Mr. Welch as farrier eight or nine years, and had been "at it" all his life.

The horse was viewed by the magistrates, and after consultation in private the Clerk asked Mr. Moore if the defence were willing to allow the mare to be examined by a veterinary to be called by the magistrates, the case being adjourned for a week. The point was whether the mare was suffering from navicular disease, and whether or not the mare started all right in the morning.—Mr.

Moore said they would consent, and the case was adjourned for a week.

On the case being resumed, John Tucker, of Manor Farm, Woolley, and William Derrick, carter, again appeared.

Mr. John Penberthy, F.R.C.V.S., of London, Professor of Medicine at the Royal Veterinary College, was now called, and deposed to examining the mare at defendant's farm at Woolley on November 8 for over two hours. He had the animal trotted up and down, both by the defendant, and by Inspector Bence, and found that it was markedly lame in the off fore limb. Subsequently he saw the mare in the stables and in the presence of a blacksmith personally applied both hammer and pincers with great force with the view of ascertaining if there were any evidence of tenderness or pain in the foot. Knowing the character of the allegations he paid particular attention to the possibility of a corn giving pain to the mare, but he found no evidence whatever of pain or tenderness, and the result was the same when the process was repeated by the smith. The shoe was then removed and the operation repeated with the same effect. On the shoe being replaced the mare was again trotted up and down ; she was still lame and he gathered from his examination that the lameness was not caused by the corn, his action with the hammer and pincers having been for the purpose of bringing to bear upon the foot the same force as would be felt when the animal was trotting. During almost the whole time of his watching the mare at rest she "pointed" her foot, a habit usually acquired after long existing pain in some part of the limb, and perhaps the cause of this pointing in more cases than not was navicular disease. Navicular disease was not easy to diagnose without an extended observation, but of all the symptoms which indicated it the pointing of the foot was, perhaps, the most frequent, occurring in fact in some nine-tenths of the recorded cases. In continuance of his examination, witness found that the muscles of the arm of the off fore limb were slightly wasted, which was an indication that they had not been in use so much as the muscles of the other limbs for some long time, and he inferred from this that the mare had been more or less lame for some time. In view, however, of the evidence which had been given in the case, and of the difficulty in diagnosing navicular disease, he was not prepared to say so strongly as had been said that the mare had been suffering for a long time from navicular disease. He was equally unprepared, however, to state that she was not suffering from it. Personally, he attributed the lameness to an outgrowth of bone on the shank-bone of the affected limb, because when pressed at this place the mare flinched in a manner which indicated pain. He had no hesitation in saying that at the time he saw the horse this bony growth was the cause of the lameness, and he could say with equal assurance that it had been in existence for two or three months at the least, and probably very much longer, during the whole of which time it had been the cause of greater or less lameness. He (witness) had to be very careful as to his opinion, and he did not speak so positively as some people, but what he said might not be any the less emphatic.

The Chairman : I take it that the horse must have started lame ?—That is my opinion, from what I have seen.

The Clerk : It has been stated that the mare can be cured in a week ; what is your view ?—I think the lameness might be very much lessened by absolute rest for a few weeks, but it would recur when the animal was again set to work.—The Clerk : Then you say practically that she could not be made fit for work again ?—The chances are all against it.

Mr. Moore : You differ from each of the other experts as regards the cause of lameness ?—I admit the possibility of navicular disease.—Mr. Moore : But you think lameness is due to the bony growth ?—I do ; but that does not say that navicular disease does not exist.

Mr. Moore elicited that after the mare was shod she would go better, not only on the affected limb, but on each of the others, and addressing the Bench on behalf of Mr. Tucker, submitted that there was no guilty knowledge on his part. The expert evidence at the first hearing was undoubtedly in favour of the defence, and this must have established a doubt in the minds of the Bench ; he thought that if on that occasion defendant had not acceded to the suggestion of the Bench they would have given him the benefit of the doubt. Being confident, however, in the justice of his case, he agreed to the offer, and his action had been quite *bona fide*, which was an important consideration.

The Chairman, after the Bench had seen the animal and consulted in private, said they considered the case clearly proved With reference to defendant's solicitor's remarks as to the Bench being in doubt on the last occasion, he might say that this was not so ; had the case been decided then they would have convicted him, for they did not believe the evidence adduced in his defence. As it was the contention of the defence that the lameness would be cured in a week, and that such rapid cure would show that the lameness was not permanent but resulted from a corn, they gave him the chance of proving that contention, and as the expert evidence was conflicting they called in a higher authority. They had that day seen the mare and she was worse than ever, showing that she had not been cured in a week and that the decision at which the Bench had arrived on the last hearing was correct. The defendant would be fined £5 and costs, the latter being limited to 5 guineas. They also found Derrick guilty of the charge and fined him 2s. 6d. or three days' imprisonment.

The Bench complimented Mr. Penberthy on the highly satisfactory manner in which he gave his evidence.

MEMORIAL OF PRINCIPAL WILLIAMS.

On Wednesday, January 16th, a meeting of veterinary surgeons, agriculturists, and others was held in the Highland Society's Chambers to consider as to a proposal which had been made for the purpose of raising a memorial of the late Principal Williams. Sir James Gibson-Craig, Bart., of Riccarton, presided, and among others present were Mr. M'Hutcheon Dobbie, Campend, Dalkeith ; Principal Dewar, Royal (Dick) Veterinary College ; Mr. Rutherford, V.S., Edinburgh ; Mr. Macdonald. Secretary of the Highland Society ; Mr. Aitken, V.S., Dalkeith ; Mr. Boyd, V.S., Melrose ; Mr. Elphick, V.S., Newcastle ; Mr. Cameron, V S., Berwick-on-Tweed; Mr. Horsburgh, S.S.C., &c. At the outset of the meeting, Mr. Aitken, V.S., read letters from numerous influential agriculturists and veterinarians all cordially approving of the suggestion of steps being taken to perpetuate the memory of the learned Principal.

The CHAIRMAN referred in appropriate and warmly eulogistic terms of the invaluable services which the late Principal had rendered to the National Agricultural Society of Scotland. He invited the company then present to speak their minds frankly as to the ways and means which they proposed to adopt in carrying out the object which they all had at heart. After the subscriptions had been got in, they could consider then as to what form the memorial should take, whether it should be a painting in oils, or the endowment of scholarships for veterinary students, or any other form.

Mr. ELPHICK said he thought the best form the memorial could take would be to establish bursaries or scholarships in connection with the New Veterinary

College, the establishment and maintenance of which had been the life-work of their late friend.

Mr. MACDONALD (secretary of the Highland Society) said the movement would be more likely to meet the success it deserved if it were entirely unconnected with any particular institution. The establishment of bursaries or scholarships open to the veterinary students of the United Kingdom would be a very suitable form, but bursaries or scholarships, open only to students of one particular institution, would be a very different thing.

Mr. CAMERON (Berwick-on-Tweed) said the late Principal had laid the whole veterinary profession and the agriculturists of the kingdom under a deep debt of gratitude to him for what he had done towards the advancement of veterinary science. With regard to what Mr. Macdonald had said, he could tell them that their late friend had emphatically expressed the opinion that there should not be more than one veterinary college in Edinburgh. He would approve of a bursary on the same lines as those given by the late Miss Dick.

The CHAIRMAN said he strongly approved of the movement being kept entirely distinct from any particular veterinary institution. He expected they would get most of the subscriptions from agriculturists for the services which the late Principal had rendered to the great Agricultural Societies, and to agriculture in general. But it by no means followed that the college which the Principal had founded would always be continued. There was a very strong feeling in favour of amalgamating the two veterinary colleges in Edinburgh, and the recent establishment of a new veterinary college in Ireland was also a factor to be reckoned with, as it would inevitably reduce the number of students coming from Ireland to get their training in Edinburgh.

The views expressed by the chairman seemed to be generally agreed to by the meeting, and all those present became members of a committee to further the proposal, Mr. Horsburgh, S.S.C., being appointed secretary. It was also resolved to invite the president of every veterinary and every agricultural Society to join the committee.—*N.B.A.*

Personal.

At the annual dinner of the Plymouth, Stonehouse, and Devonport Tramway Company on Saturday last the health of Mr. P. G. Bond, M.R.C.V.S., the veterinary to the Company, was proposed by Mr. G. H. Moreton, who said it was largely owing to Mr. Bond's skill and attention that the horses of the Company did so well, and that so much was got out of them. He was confident that the Company had one of the best tramway studs in the kingdom, and the fitness of the horses was due to a great extent to Mr. Bond.

In reply to the toast Mr. Bond said he hoped if deprived by electrical traction of the privilege of looking after the horses he would not be forgotten by those with whom he had been so long connected. The toast, as well as Mr. Bond's reply, evoked warm applause.

Mr. JOSEPH LYONS, M.R.C.V.S., who has been assistant for the last three years with Henry Thompson, Veterinary Surgeon, Aspatria, has been selected by Mr. J. H. Gilruth, Chief Veterinary Surgeon to the Government of New Zealand, as one of the veterinary surgeons for inspection duty in New Zealand under the new Act, "Slaughtering and Inspection" which comes into force in April. Mr. Lyons leaves with those selected on the 31st inst., by the ss. "Wakanui" from the Royal Albert Docks, London.

The wife of Mr. J. Bate, veterinary surgeon, Sutton Frodsham, Cheshire, has just given birth to triplets, two girls and a boy. The mother and children are doing well.—*Manchester Evening Chronicle*, Jan. 12.

Mr. R. W. RUSSELL has been appointed by the Local Authority for the county of Ayr to be veterinary inspector for the Ayr district, in room of the late Mr. Fletcher.

The New Operating Table.

Mr. Dollar, the well-known veterinary surgeon, of Bond Street, has introduced an ingenious operating table for horses, and M. Vinsot, a French "vet." of Chartres, has devised another extremely like it, which is fully illustrated in *La Nature*. In both "tables" the horse enters an iron frame, pivotted at the middle, and can be swung round to any angle or even upside down. —*The Globe.*

ARMY VETERINARY DEPARTMENT.

WAR OFFICE, PALL MALL, Jan. 18.

Col. Lumsden's Corps—Temporary Vet.-Lieutenant W. Stevenson is granted the temporary rank of Vet.-Captain.

Captain A. England, A.V.D., and C.V.S. M. McGill have been discharged from hospital to duty, week ended Dec. 30.

The "Aurania" left for England Jan. 8th, having on board the following invalids:—Maj. E. Day, A.V.D., Capt. J. G. O'Donel, A.V.D., Lt. F. W. Hunt, A.V.D., also on passage home C.V.S. T. R. Runciman and F. C. Pineo.

Mr. Runciman, C.V.S., left Albert Docks in the "Algeria" for Cape Town, on Jan. 15.

Cape Town, Jan. 23.

On Passage home, Civil Veterinary Surgeon W. L. Cockburn.

Capt. R. W. Raymond, A.V.D., who was dangerously ill at Pietermaritzburgh on Jan. 5 is now reported out of danger.

CORRESPONDENCE.

VETERINARY ASSISTANTS.

Sir,

I wonder how many of the contributors of letters on this subject remember the "running doctor" who filled so large a place in our young days!—fifty years ago—not many, I trow. We have advanced all along the line since then, and the unqualified assistant of to-day is altogether a different man, and in most respects a better one professionally, but it appears to have escaped the notice of some of your contributors that there are some men born to use the second violin and never intended by nature to play the first fiddle as principals. Nearly all the unqualified men will tell you how a brilliant career at college was cut short by the untimely deaths of their fathers (in my day it was due to their recall, after uselessly squandering the parents' money.)

Some of them have never seen the college gates or have "passed the College" on a 'bus, as they will explain if pressed; others have grown up as assistants without either the hope or the energy to become qualified. Their horizon is bounded by £3 per week certain,

the good opinion of their employers, and a certain amount of *kudos* among the less educated clients. Since they are not spurred on by ambition, they are content to play a very useful part, with freedom from the cares which every man on his own account must accept. They are not troubled by quite so much dignity as the recent graduate and will wash bandages, clean up the surgery, and put on poultices, as a matter of course, and not as a favour to the employer. In a large rough practice with a lot of contracts, such men are very useful, and it cannot be said with justice, that clients suffer by their employment.

The qualified man who acts as assistant for any other reason than to acquire experience for himself when he shall presently buy or make a practice, is a poor spiritless duffer, whose parents or guardians have wasted their money on him. The average employer recognises this. It is perfectly fair, and I for one do not expect anything else. If the young graduate will do his best, while acquiring experience in my practice, not to let me down or injure my business I am satisfied, but I expect more, and yet less, of the unqualified one. He is a business assistant not a professional gentleman (*inter alia*, he may be a gentleman all the same), and he and I both hope that he will be a permanent member of the staff. He desires security of tenure, and I desire a trustworthy second man, who shall not be conspicuously superior to myself in the eyes of my clients, or of himself. He will know the *customers* and how to deal with them, which the bird of passage cannot.

I noticed a characteristic reply came from America as regards assistants, to the effect that no one was mug enough to remain in that capacity. Those were not the words employed, but could be read between the lines. I say that the young fellow with a recently signed diploma, should not be jealous of the unqualified man, nor resent the preference which employers show for him. There is surely no easier business to start for oneself than a veterinary practice, and make sure of earning £150 the first year, without more than a "tenner" to begin with.

In my day it was (to me) remarkable that the majority of the men who could not pass, after many tries, were the sons of prosperous London practitioners. Is it so now? The lowly born who took rooms in poor streets and were known as "King Street Harriers" came out on the top. Many of them had worked at the forge and didn't mean to go back to it for want of their "tickets."

VETERAN.

THE FELLOWSHIP EXAMINATION.

Sir,

In 1898 the Fellowship examinations were conducted in a very strange manner, which necessitated the Council requesting the Secretary to write the examiners for an explanation. It should be interesting to know whether the examiners "ignored" the Council as they did the candidates when an explanation was desired, also whether the acceptance or rejection of theses depends upon the state of the examiners' "livers" or "College funds," as it is most remarkable in some instances all the theses are accepted and on other occasions over fifty per cent are rejected.

THESES.

COCKED TOE AND DROPPED SOLE IN A HIND FOOT.

Sir,

I notice Mr. Leeney's remark at the end of his second article in your issue of January 19. There seems to me to be a shoe that would answer his requirements and at the same time give the horse a chance to start a load. The shoe I would suggest would be a seated rocker shoe which if for a cart horse might be made of iron, say an inch and a quarter wide by 5-8ths of an inch thick. Across the width of the ground surface of the shoe three or four fullers might be put. The ribs thus made would be chiefly confined to the quarters of the shoe. They would not have to commence too near the toe nor be brought back too near the heel. The nails would be driven in between these ribs.—Yours truly,

G. M.

THE EXAMINATIONS.—STABLE MANAGEMENT AND HANDLING OF ANIMALS.

Sir,

I have been following closely the varied and animated discussions on the examination question which have lately been held in our Council chamber.

It is not my intention to dilate on the subject, for as you observe, Mr. Editor, we are all practically agreed that the standard of education should not be lowered, whilst no one ought to demur at the entry examination being uniform all over the kingdom.

I should like, however, with your permission, to make a few comments on the subject of "Stable Management and the Handling of Animals." I have heard it said that the veterinary surgeon, like the poet, was born and not made, and that if as a veterinary surgeon a man was successful, in any other walk in life he would end on the woolsack. I am inclined to believe there is a good deal of truth contained in the saying.

To proceed, what class of men in our profession are the most successful? Undoubtedly the men who, seemingly by some instinct, have engrained into them the "stable management and handling of animals," men who can judge a horse at a glance, who can talk to any horse-owner or even horse-dealer and keep them in their right place.

The next question is, Where did this seemingly gifted class of man get this knowledge? The books? Not there, my child! The college? No. Where then? Why more than likely at home from the days of his childhood onwards. More than likely at the age of nine he could handle the ribbons well and ride any class of animal, even to an unbroken colt in the field without bridle or saddle. Naturally, too, this boy, if observant, would soon begin to realise animals in health, and of course the word animals includes horses, cattle, sheep, pigs, etc. This leads me to the point that to know an animal in disease it is essential to recognise the healthy state, and it is my opinion that the man devoid of that practical knowledge of healthy animals is handicapped severely in correctly diagnosing a diseased condition.

It has been my experience that if this practical knowledge, so essential to a veterinary surgeon, was not already in a young man before entering college all the teaching in the world will not bring him to know it. There would be little use of setting a young man at the age of twenty to learn the violin if he had never before known anything about it, and this holds quite as good as regards the practical knowledge of live stock. It must be learned gradually from childhood.

I can recall now fellow students at College, clever young men, passing their examinations well even to winning medals, who were all along the line devoid of this practical knowledge, and who, alas, found their great error when too late.

This latter class of man does great harm to our profession, as he is bound to make many visible mistakes in diagnosing diseased conditions (practical men make mistakes, but as a rule nobody save their own selves is any the wiser) thus shaking the confidence of stockowners, who begin to think our profession a bogus.

I do not think the profession a bogus by any means, and in conclusion if some law was made by our Council

to the effect that a young man before entering for his College career must show fitness to take his place in life as a veterinary surgeon (it could be judged) it would be better for us as a profession, and assuredly it would be the means of saving many well meaning young men from taking a wrong step.—I am, yours etc.,

CHAS A. SQUAIR, M.R.C.V.S.

Seville House, Reigate,
January 22nd.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs. H. Leeney, E. Morgan, C. A. Squair, J. T. Healy. G. M. "Thesis," "Vetersan," "Observer."

[Observer has not sent his name—we cannot publish his communication.]

"*Riding and Hunting*," Capt. M. F. Hayes, Hunt and Blackett, 16/- net.; "*Veterinary Posology*," George A. Banham, F.R.C.V.S., Second Edition, Balliére, Tindall & Cox, 2/6 net. *The Times.*

Veterinary Societies—Addresses.

Alterations for this list must be duly notified by the Secretaries

BOMBAY V.M.A.
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Vice-Pres: Vety.-Lieut. F. S. H. Baldrey, M.R.C.V.S. A.V.D.
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Meetings, Second Friday of Feb., June, and October

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CENTRAL V.M.S.
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29 Spring-st., Hyde Park, W.
Meetings, First Thursday in each month, except August and September, 10 Red Lion Square, Holborn, at 7 p.m.

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Weston Longville, Norwich
Meetings, Second Tuesday, Feb. and July

GLASGOW V.M.S.
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Hon. Sec. Mr. John P. Small.

VET. MED. ASSN. OF IRELAND.
Pres: Mr. M. Hedley, F.R.C.V.S.
Privy Council Office, Dublin Castle
Hon. Sec. Mr. J. McKenny, M.R.C.V.S.
116 Stephens-green-west, Dublin

LANCASHIRE V.M.A.
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Hon. Sec: Mr. Harry Locke, M.R.C.V.S.
Grosvenor Street, Oxford Street., Manchester
Meetings, 1st Thursday in March, June, Sept., & Dec.

LINCOLNSHIRE V.M.S.
Pres Mr. James Smith, M.R.C.V.S., Huntingdon
Hon. Sec: Mr. E. C. Russell, M.R.C.V.S., Grantham
Meetings, Second Thursday, Feb., June and October

MIDLAND COUNTIES V.M.A.
Pres: Mr. J. J. Burchall, M.R.C.V.S., Loughborough
Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S.,
Camden House, High St., West Bromwich
Meetings, Second Tuesday, Wednesday, Thursday, and Friday alternately in Feb., May, Aug. and Nov.

NATIONAL VET. ASSOCIATION.
Pres: Prof. J. R. U. Dewar, F.R.C.V.S., Edinburgh
Sec: Mr. William Hunting, F.R.C.V.S.
Treas: Mr. F. W. Wragg, F.R.C.V.S., Whitechapel, London.

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.
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Treas: Mr. E. Faulkner, F.R.C.V.S., Manchester
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NORTH OF ENGLAND V.M.A.
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Hon. Sec: Mr. H. S. Elphick, M.R.C.V.S.
Newgate-street, Newcastle-on-Tyne
Meetings, Third Friday, Feb., May, Aug. and Nov.

NORTH OF SCOTLAND V.M.S.
Pres: Mr. J. McBryde, M.R.C.V.S., Strichen
Hon. Sec. & Treas: Mr. Clement Baxter, M.R.C.V.S., Elgin

NORTH WALES V.M.A.
Pres: W. Wynne Williams, M.R.C.V.S., Dolgelly
Hon. Sec. O. Trevor Williams, M.R.C.V.S., Llangefni
Meetings, First Tuesday, March and September

ONTARIO V.A.
Pres: Mr. G. L. Robson.
Sec: C. H. Sweetapple, Toronto.

ROYAL COUNTIES V.M.A.
Pres: Mr. Sidney Villar, F.R.C.V.S., Greenhill, Harrow.
Hon. Sec: Mr. E. P. Owen, M.R.C.V.S., 98 High-st. Thame
Meetings, Last Friday, Feb., June and Nov.

ROYAL SCOTTISH V.S.
Pres: Mr. Reid, M.R C.V.S., Auchtermuchty.
Hon. Sec: Mr. W. D. Fairbairn, M.R.C.V.S., Cupar, Fifeshire

ROYAL VETERINARY COLLEGE M.A.
Pres: Prof. Woodruff
Hon. Sec: Mr. F. R. Mason, M.R.C V.S., R. V. Coll.
Assist. H.S. Mr. W. H. Chase, R.V.C., Camden Town, N.W.

SCOTTISH METROPOLITAN V.M.S.
Pres: Mr. Andrew Boyd, F.R.C.V.S., Melrose
Hon. Sec: Mr. P. Moir, M.R.C.V.S., 9 Kilmain Terr. Edinbro

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.
Pres.: Mr. G. E. Gibson, M.R.C.V.S., Sedgefield, Ferryhill
Hon. Sec: Mr. W. Awde, F.R.C.V.S., Stockton-on-Tees.
Meetings, First Friday, Mar., June, Sept. and Dec.

SOUTHERN COUNTIES V.M.S.
Pres: Mr. H. Hall, F.R.C.V.S, Southampton
Hon. Sec: Mr. C. Pack, M.R.C.V.S., Lymington, Hants
Meetings, Last Thursday, Mar., June and Sept.

SOUTH WALES AND MONMOUTHSHIRE V.M.A.
Pres: Mr. E. Sayer, M.R.C.V.S., Newport, Mon.
Hon Sec. Mr. D. G. Davies, M.R.C.V.S., High-st, Swansea
Treas. Mr. E. Sayer, M.R.C.V.S., Newport, Mon.
Meetings First Thursday in March, and Autumn.

WESTERN COUNTIES V.M.A.
Pres: Mr. P. G. Bond, M.R.C.V.S., Plymouth
Hon. Sec: Mr. John Dunstan, M.R.C.V.S. St. Mellion, Cornwall
Meetings, Third Thursday, March, July and November

WEST OF SCOTLAND V.M.A.
Pres: Dr. James McIntosh McCall, Vety. Coll. Glasgow
Hon. Sec & Treas: Mr. J. Bishop, M.R.C.V.S.,
754 Garscube Road, Glasgow

YORKSHIRE V.M.A
Pres Mr. Frank Somers, M.R.C.V.S. Wade Lane, Leeds
Hon. Sec; Mr. A. McCarmick, M.R.C.V.S., Kirkstall-rd, Leeds
Meetings, Last Friday in Jan., April, and October.